

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claim 1, 4 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyoshi (US 20020123351).

As to claims 1, 4, Miyoshi teaches a radio communication apparatus comprising: a coding section that codes transmission data at a changeable coding rate (see fig. 3, 112, paragraphs 0031-0042); a modulation section that performs modulation using one of a plurality of modulation schemes (see fig. 3, 113, paragraphs 0031-0042); and a control section that tentatively determines an MCS level in accordance with channel quality, compares the tentatively determined MCS level with an MCS level used in previous control, determines the tentatively determined MCS level when a level difference is within the predetermined fluctuation range or determines an MCS level having a level difference with respect to the MCS level used in previous control limited within the fluctuation range when the level difference exceeds the fluctuation range, and controls the coding section and the modulation section so as to have the determined MCS level (see fig. 3, 107, paragraphs 0031-0042).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2, 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyoshi (US 20020123351 in view of Awad (US 20040022177)).

As to claim 2, Miyoshi teaches a detection section that detects a channel frequency; and a determination section that determines the fluctuation range with respect to the MCS level used in previous control according to the detected frequency, wherein the control section determines the MCS level by the determined fluctuation range (see fig. 3, 110, paragraphs 0031-0042). Miyoshi fails to teach wherein the frequency is Doppler frequency (see paragraphs 0027, 0075, 0076). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Awad into the system of Miyoshi in order to provide an adaptive modulation and coding method.

As to claim 3, the combination of Miyoshi and Awad teaches wherein the determination section makes the fluctuation range large when the Doppler frequency is high, and makes the fluctuation range small when the Doppler frequency is low (see Miyoshi paragraphs 0031-0042, Awad 0027, 0075, 0076).

***Conclusion***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NHAN LE whose telephone number is (571)272-7892. The examiner can normally be reached on 8:00-5:00 (Mon-Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on 571--272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Nhan T Le